

# The Effect of Extension on Small Scale Fish Processing Creativity in West Java, Indonesia

Yaya Hudaya<sup>1\*</sup> Aida Vitayala S. Hubeis<sup>2</sup> Basita Ginting Sugihen<sup>2</sup> Anna Fatchiya<sup>2</sup>

1. Directorate General of Capture Fisheries, Ministry of Marine Affairs and Fisheries, Medan Medeka Timur  
Street No. 16, Central Jakarta, Indonesia

2. Faculty of Human Ecology, Bogor Agricultural University, FEMA W1-L2 Building, Kamper Street, Dramaga  
IPB Campus Po Box 16680, Bogor, Indonesia

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## Abstract

Fisheries extension for small scale fish processing in West Java Province - Indonesia, conducted by central government and local government. Extension services were conducted through training and socialization methods. The intensity of counseling is crucial in changing the behavior of small-scale fish processors. This study aims to analyze the effect of perception of fish processors as participants of fisheries extension to business creativity. The method analyzed quantitatively with multiple regression. The results showed that the perception of fish processors as participants of fisheries extension can affect the creativity of the business. Significant variables were the training of product packaging and appropriate training methods that it easily applied by the fish processor. Therefore, the policy of fisheries extension to improve the creativity of the business should be directed to the training of packing the good product.

**Keywords:** creativity, empowerment, extension, fisheries, small scale

## 1. Introduction

Fisheries extension activities in Indonesia conducted by lecture and training. Lectures in Indonesia are often referred to as sosialisasi. The event of sosialisasi of the field of fish processing to provide knowledge about the ways of processing a good fish. In addition, training activities are directed to horizontal technology transfer in the field of fish processing.

Fishing extension materials that have been taught to fish processors by Fisheries Extension Center in 2017 are (1) good handling practices in 2013, (2) milk processing technology without thorns in 2013, (3) kaki naga drillery package 2013, 4) misuse of formaldehyde in fishery products 2014, (5) preserving fish with frozen picung 2014, (6) eating fish formalin health endangered by 2015, (7) salmonella in fish the cause of diarrhea in 2015, (8) fish processing technology salted in 2014, (9) packaging technology in 2015.

Actually, fishery extension especially for small scale fish processing is aimed to improve business creativity. Observations at the study sites show that more creative fish processors are more highly income than traditional processors. According to Havighurst (1972) if one manages to accomplish his duty then the person is happy and has no difficulty in carrying out his next task. Therefore, the perception of fish processors on materials and extension methods are important to be examined by extension experts to ensure the influence of fishery extension materials and methods on improving business creativity.

## 2. Method

This research has used survey method. Respondents filled out questionnaires accompanied by researchers. Data collection was conducted in Cirebon and Sukabumi districts of West Java Province from October 2016 to February 2017. The research location in Cirebon District is Gunungjati, Plumbon, Sumber, Suranenggala, Mundu, Pangenan, Panguragan, Beber, Jamblang, Weru, Astanajapura, and Gebang. The research location in Sukabumi is Pelabuhan Ratu, Cisolok, Cisaat, Ciemas, Bantargadung, Jampang Kulon, Simpenan, Citarik, Cibadak and Sukaraja. Figure 1 shows the location of the study.



Figure 1. Map of The Study Site

Data collection in both locations to 100 respondents in Sukabumi Regency consisted of 38 salted fish processors, 22 processed pindang, 28 baso processor, 5 processors of shrimp paste, 3 fish processor abon, and 4 other processors. Data collection in Cirebon Regency to 150 respondents consisted of 24 salted fish processors, 50 pindang processors, 12 baso processors, 6 processing processors of shrimp paste, 5 fish processing processors, 9 fish crackers, 16 fish smokers, 10 processors blue swimming crab, 14 processors of shellfish, 4 other processors. Further data is analyzed by using multiple regression and different test of mann whitney U. From result of regression analysis found variables of perception of fishery extension that influence business creativity.

### 3. Result and Discussion

The key to social change is through the process of community development. Community development can also be interpreted as a planned change (Lippitt 1953). The planned change is done through the process of learning and maturity. The need for change can occur from within the system through the experience of failure and development trials. Change initiatives also often come from outside the system after going through various observations of client needs. Carriers of change initiatives from outside the client system are often referred to as change agents (Lippitt 1953).

Extension activities at both sites were not significantly different. This is evidenced by the perception of small-scale fish processors on fishery extension materials and methods. Fisheries extension materials that were often conducted in the study sites are formalin socialization, fish processing technology training, and product packaging training. Table 1 has shown no significant differences in perception of materials and methods in both sites.

The sosialisasi material for the prohibition of the use of preservative type of formalin preservatives was considered to be in accordance with the needs of fish processors in both research sites because formalin was considered to endanger human health. Fish processors in both research sites admitted to not using formalin preservatives and the like in their processed fish products. The salted fish processor in Sukabumi Regency mostly stated that they do not use formalin preservative and fish processor in Cirebon Regency. Salted fish processors rely on salt and sunlight frequency to preserve the product. However, there are some products of pindang in Cirebon after laboratory test proved positive using formalin. The pindang processors claimed not to use formalin instead accused fish supplier companies of adding formaldehyde before being stored in coldstorage. The reason for processing fish in Cirebon Regency because processing and marketing pindang done every day and does not require any preservative.

Tabel 1. Level of perception of fisheries extension participants in the study sites

Perception of fish processor	Cirebon	Sukabumi	U test
	Score*)	Score*)	P**)
Sosialisasi of formalin (X1)	4	3	0,14
Training of fish processing technology (X2)	3	4	0,60
Product packaging training (X3)	3	4	0,26
The lecture method (X4)	3	3	0,63
Training method (X5)	3	3	0,64

\*) Average score of perception with values 1, 2, 3 & 4

\*\*) significant at  $P < 0,05$  (mann whitney U test)

In addition, perceptions of fish processing technology training and product packaging training were assessed to suit the needs of fish processors in both research sites because the processing technology and product packaging can improve business productivity. These perceptions were not significantly different in both sites.

Fisheries extension agents as innovative change agents (Rogers 1983). Extension agents have an interest in developing food supplies and petrified people in their businesses (Lionberger and Gwin 1982). An extensionist is someone who on behalf of the government or extension agency influences the decision-making process by the target to adopt innovation (Rogers 2003). Extension workers should also be able to listen to and solve problems, as well as understand practical information needs and economically satisfactory outcomes. Group methods are more targeted such as lectures or speeches, demonstrations, and group discussions. (Van den Ban and Hawkins 1996).

The creativity of the smallholders fish processing in West Java includes special skill. Indicators of creativity in processing fish that are still relevant today are: (1) making products with super quality, (2) products packed well and interesting, (3) diversification of product sales in tourist attractions and gift shops, (4) promotion products online or exhibition, and (5) provide rebates for new customers. Table 2 has shown the business activities of fish processors in both locations.

Business creativity at both sites showed no real difference except creativity in product exhibition activities. Exhibition activities in Sukabumi were often held because the activities of the Provincial and National Governments tend to be frequently implemented in Sukabumi District. The exhibition of fishery products in Sukabumi Regency on the occasion of World Food Day in 2016. Processing abon following exhibition Jabar Expo products in Bandung, product exhibition in Cimalati and Bali. The exhibition of fishery products was also on the day of Krida Agriculture. In addition, Sukabumi Regency built a showroom as a Center for the Promotion of Craft Products and Trade. The fish processor was not charged to pay the rent, only the profit share to the outlet for the operational cost of the sale value. This product exhibition activity was expected to stabilize the price at the consumer level because it can reduce the chain of commerce. Sukabumi Regenc also build packaging houses in 2011. Package house in Sukabumi Regency is largest in West Java Province.

Table 2. Level of creativity of fish processing business in research location

Type of creativity	Cirebon	Sukabumi	U test
	Score*)	Score*)	P**)
Create a superior product	2	3	0,26
Designing attractive packaging	1	2	0,47
Sell product at gift shop	1	2	0,33
Sell products via internet	1	1	0,69
Provide discounts to customers	3	2	0,50
Following product exhibition	1	1	0,04**
Total (Y)	1,5	1,8	

\*) Average score of perception with values 1, 2, 3 & 4

\*\*) significant at  $P < 0,05$  (mann whitney U test)

The creativity of the fish processing business in Cirebon Regency was lower than the fish processing in Sukabumi Regency because the exhibition of fishery products was rarely held in Cirebon Regency although marine and fishery program in Cirebon Regency encourages exhibition and bazaar of fishery products. Cirebon Regency was also built a packaging house in 2012, but still a few business actors who use the packaging house.

The influence of fishery extension activities on business creativity based on the perception of fish processor who have followed extension activity is  $Y = 1,34 - 0,02X_1 + 0,11X_2 + 0,18X_3 - 0,19X_4 + 0,35X_5$   $R^2 = 0,14$ ,  $P < 0,05$ . The result of multi regression analysis showed that only  $X_3$  and  $X_5$  variables that influence the creativity of fish processing business ( $P < 0,05$ ). Variable  $X_3$  is product packaging training and  $X_5$  variable is the right training method.

The level of perception of product packaging training was very suitable with the needs of fish processing in Sukabumi Regency and fish processor in Cirebon Regency stated that the training has also been in accordance with the needs. Fish processing training methods in both research sites were considered to be appropriate and easy to apply in fish processing units. Processing requirements in both research sites were packaging product training as the market demand for packaged fishery products was increasing from time to time. The level of perception also shown that fish processor in Sukabumi Regency more creative than processor in Cirebon regency.

The process of packaging the product requires the creativity of fish processors in choosing packaging, designing, making labels and brands. The creativity of fish processors can influence the development of their business. The product brands of fishery products will be known and trusted by consumers because of its distinctive and quality products. Brand strength can accelerate market penetration (Stamm 2008).

Perceptions of training needs of packaged products were not only based on market demand but are influenced by the promotion of products viewed on television, social media, or direct viewing of products

produced by fish processors in other regions. According to Bandura (1977) that creativity can emerge through the process of imitating the model. The observer combines several characteristics of the model and produces a new form. Creative models have limitations if the copycat skills are so different from the source of the model that new types of creativity are difficult to obtain. Therefore, the level of creativity is also determined by the mental person in solving the problem (Joyce and Weil 2003).

Differences in the level of creativity in both research sites can be influenced by the learning environment of fish processors. The learning environment is not only comfort but more influenced by challenges and learning barriers (Wapner 1978). In addition, the lack of dialogue between teachers and participants with banking systems can hamper creativity (Freire 1972). Creativity is sometimes generated by irrational ways of thinking in art and even in the field of science (Gordon 1961).

Learning and creative thinking is the outcome of the community empowerment process (Skerrit and Teare 2013). Concrete experiences and observations can shape a person's learning style to be a diverger and an accomodator (Kolb and Fry 1975), divergers have the power of imagination, generating ideas, seeing things from different perspectives, attracting cultures and people, liking art, humanism, and freedom, while the accomodator has great ability to do everything, dare to take risks, quickly adapt to the environment, eager to solve problems, usually work a lot, connect with each other for information, and sales or marketing oriented.

Business creativity can be improved through extension process. Creativity is a gift and achievement beyond the traditional and can be measured both as a special skill and a general skill, the specific domain measures some creative skills given while the general domain is not quite some of it must be related to other types of creativity (Kaufman et al. 2008, Baer 2016).

#### 4. Conclusion

The extension of fisheries conducted in both research locations influences business creativity. The creativity of fish processing business in West Java - Indonesia is determined by the training material of the product packaging and the proper training method so that the processor can apply the technology.

Extension workers can improve the creativity of fish processing business. The right counseling activity to improve business creativity is the training of product packaging with the right method. The creativity of fish processing business can be measured by indicator of product packaging design capability.

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